Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

```
   1 CGACCTGGCC GCCGGCCGCT CCTCCGCGCG CTGTTCCGCA CTTGCTGCCC
  51 TCGCCCGGCC CGGAGCGCCG CTGCCATGCG GCTGGCGCTG CTCTGGGCCC
 101 TGGGGCTCCT GGGCGCGGGC AGCCCTCTGC CTTCCTGGCC GCTCCCAAAT
 151 ATAGCCCTGC TGTCGATTCC CTCAGTACTG TCTTGGGGTG TCCTGGGACC
 201 TGCAGGTGGC ACTGAGGAGC AGCAGGCAGA GTCAGAGAAG GCCCCGAGGG
 251 AGCCCTTGGA GCCCCAGGTC CTTCAGGACG ATCTCCCAAT TAGCCTCAAA
 301 AAGGTGCTTC AGACCAGTCT GCCTGAGCCC CTGAGGATCA AGTTGGAGCT
 351 GGACGGTGAC AGTCATATCC TGGAGCTGCT ACAGAATAGG GAGTTGGTCC
 401 CAGGCCGCCC AACCCTGGTG TGGTACCAGC CCGATGGCAC TCGGGTGGTC
 451 AGTGAGGGAC ACACTTTGGA GAACTGCTGC TACCAGGGAA GAGTGCGGGG
 501 ATATGCAGGC TCCTGGGTGT CCATCTGCAC CTGCTCTGGG CTCAGAGGCT
 551 TGGTGGTCCT GACCCCAGAG AGAAGCTATA CCCTGGAGCA GGGGCCTGGG
 601 GACCTTCAGG GTCCTCCCAT TATTTCGCGA ATCCAAGATC TCCACCTGCC
 651 AGGCCACACC TGTGCCCTGA GCTGGCGGGA ATCTGTACAC ACTCAGACGC
 701 CACCAGAGCA CCCCCTGGGA CAGCGCCACA TTCGCCGGAG GCGGGATGTG
 751 GTAACAGAGA CCAAGACTGT GGAGTTGGTG ATTGTGGCTG ATCACTCGGA
 801 GGCCCAGAAA TACCGGGACT TCCAGCACCT GCTAAACCGC ACACTGGAAG
 851 TGGCCCTCTT GCTGGACACA TTCTTCCGGC CCCTGAATGT ACGAGTGGCA
 901 CTAGTGGGCC TGGAGGCCTG GACCCAGCGT GACCTGGTGG AGATCAGCCC
 951 AAACCCAGCT GTCACCCTCG AAAACTTCCT CCACTGGCGC AGGGCACATT
1001 TGCTGCCTCG ATTGCCCCAT GACAGTGCCC AGCTGGTGAC TGGTACTTCA
1051 TTCTCTGGGC CTACGGTGGG CATGGCCATT CAGAACTCCA TCTGTTCTCC
1101 TGACTTCTCA GGAGGTGTGA ACATGGACCA CTCCACCAGC ATCCTGGGAG
1151 TCGCCTCCTC CATAGCCCAT GAGTTGGGCC ACAGCCTGGG CCTGGACCAT
1201 GATTTGCCTG GGAATAGCTG CCCCTGTCCA GGTCCAGCCC CAGCCAAGAC
1251 CTGCATCATG GAGGCCTCCA CAGACTTCCT ACCAGGCCTG AACTTCAGCA
1301 ACTGCAGCCG ACGGGCCCTG GAGAAAGCCC TCCTGGATGG AATGGGCAGC
1351 TGCCTCTTCG AACGGCTGCC TAGCCTACCC CCTATGGCTG CTTTCTGCGG
1401 AAATATGTTT GTGGAGCCGG GCGAGCAGTG TGACTGTGGC TTCCTGGATG
1451 ACTGCGTCGA TCCCTGCTGT GATTCTTTGA CCTGCCAGCT GAGGCCAGGT
1501 GCACAGTGTG CATCTGACGG ACCCTGTTGT CAAAATTGCC AGCTGCGCCC
1551 GTCTGGCTGG CAGTGTCGTC CTACCAGAGG GGATTGTGAC TTGCCTGAAT
1601 TCTGCCCAGG AGACAGCTCC CAGTGTCCCC CTGATGTCAG CCTAGGGGAT
1651 GGCGAGCCCT GCGCTGGCGG GCAAGCTGTG TGCATGCACG GGCGTTGTGC
1701 CTCCTATGCC CAGCAGTGCC AGTCACTTTG GGGACCTGGA GCCCAGCCCG
1751 CTGCGCCACT TTGCCTCCAG ACAGCTAATA CTCGGGGAAA TGCTTTTGGG
1801 AGCTGTGGGC GCAACCCCAG TGGCAGTTAT GTGTCCTGCA CCCCTAGAGA
1851 TGCCATTTGT GGGCAGCTCC AGTGCCAGAC AGGTAGGACC CAGCCTCTGC
1901 TGGGCTCCAT CCGGGATCTA CTCTGGGAGA CAATAGATGT GAATGGGACT
1951 GAGCTGAACT GCAGCTGGGT GCACCTGGAC CTGGGCAGTG ATGTGGCCCA
2001 GCCCCTCCTG ACTCTGCCTG GCACAGCCTG TGGCCCTGGC CTGGTGTGTA
2051 TAGACCATCG ATGCCAGCGT GTGGATCTCC TGGGGGCACA GGAATGTCGA
2101 AGCAAATGCC ATGGACATGG GGTCTGTGAC AGCAACAGGC ACTGCTACTG
2151 TGAGGAGGGC TGGGCACCCC CTGACTGCAC CACTCAGCTC AAAGCAACCA
2201 GCTCCCTGAC CACAGGGCTG CTCCTCAGCC TCCTGGTCTT ATTGGTCCTG
2251 GTGATGCTTG GTGCCAGCTA CTGGTACCGT GCCCGCCTGC ACCAGCGACT
```

FIGURE 1A

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```
2301 CTGCCAGCTC AAGGGACCCA CCTGCCAGTA CAGGGCAGCC CAATCTGGTC
2351 CCTCTGAACG GCCAGGACCT CCGCAGAGGG CCCTGCTGGC ACGAGGCACT
2401 AAGGCTAGTG CTCTCAGCTT CCCGGCCCCC CCTTCCAGGC CGCTGCCGCC
2451 TGACCCTGTG TCCAAGAGAC TCCAGTCTCA GGGGCCAGCC AAGCCCCCAC
2501 CCCCAAGGAA GCCACTGCCT GCCGACCCCC AGGGCCGGTG CCCATCGGGT
2551 GACCTGCCCG GCCCAGGGGC TGGAATCCCG CCCCTAGTGG TACCCTCCAG
2601 ACCAGCGCCA CCGCCTCCGA CAGTGTCCTC GCTCTACCTC TGACCTCTCC
2651 GGAGGTTCCG CTGCCTCCAA GCCGGACTTA GGGCTTCAAG AGGCGGGCGT
2701 GCCCTCTGGA GTCCCCTACC ATGACTGAAG GCGCCAGAGA CTGGCGGTGT
2751 CTTAAGACTC CGGGCACCGC CACGCGCTGT CAAGCAACAC TCTGCGGACC
2801 TGCCGGCGTA GTTGCAGCGG GGGCTTGGGG AGGGGCTGGG GGTTGGACGG
2851 GATTGAGGAA GGTCCGCACA GCCTGTCTCT GCTCAGTTGC AATAAACGTG
2901 ACATCTTGGA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA
2951 AAAAAAAAAA AAAAAAAA
```

(SEQ ID NO: 1)

FEATURES:
5'UTR: 1 - 75
Start Codon: 76
Stop Codon: 2641
3'UTR: 2644

Homologous proteins:

Top 10 BLAST Hits:

Sequences producing significant alignments:	Score (bits)	E Value
CRA|335001098640323 /altid=gi|7451525 /def=pir||G02390 disinteg...	1714	0.0
CRA|335001098639998 /altid=gi|11497002 /def=ref|NP_003806.2| a ...	1698	0.0
CRA|1000682348196 /altid=gi|9945328 /def=ref|NP_064704.1| a dis...	1377	0.0
CRA|18000005154484 /altid=gi|6752962 /def=ref|NP_033744.1| a di...	1351	0.0
CRA|1000737073449 /altid=gi|6682839 /def=dbj|BAA88903.1| (AB022...	1319	0.0
CRA|157000140328366 /altid=gi|12720142 /def=ref|XP_010635.1| a ...	970	0.0
CRA|18000005119563 /altid=gi|4501905 /def=ref|NP_003465.1| a di...	539	e-152
CRA|98000043629034 /altid=gi|13027660 /def=gb|AAC08702.2| (AF02...	539	e-152
CRA|18000005009258 /altid=gi|6680640 /def=ref|NP_031426.1| a di...	538	e-151
CRA|98000043606871 /altid=gi|12802370 /def=gb|AAK07852.1|AF3113...	517	e-145

FIGURE 1B

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Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

EST:

Sequences producing significant alignments: Value	Score (bits)	E
gi|12777372 /dataset=dbest /taxon=960...	1750	0.0
gi|10205626 /dataset=dbest /taxon=96...	1364	0.0
gi|10746030 /dataset=dbest /taxon=96...	1352	0.0
gi|12758166 /dataset=dbest /taxon=960...	1334	0.0
gi|13130161 /dataset=dbest /taxon=960...	1306	0.0
gi|11003698 /dataset=dbest /taxon=96...	1298	0.0
gi|12763891 /dataset=dbest /taxon=960...	1281	0.0
gi|9124688 /dataset=dbest /taxon=9606...	1211	0.0

EXPRESSION INFORMATION FOR MODULATORY USE:
gi|12777372 placenta
gi|10205626 lung
gi|10746030 ovary
gi|12758166 colon
gi|13130161 kidney
gi|11003698 thyroid gland
gi|12763891 prostate
gi|9124688 eye

Tissue expression:
leucocyte

FIGURE 1C

Docket No.: CL001177DIV2
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Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

```
  1 MRLALLWALG LLGAGSPLPS WPLPNIALLS IPSVLSWGVL GPAGGTEEQQ
 51 AESEKAPREP LEPQVLQDDL PISLKKVLQT SLPEPLRIKL ELDGDSHILE
101 LLQNRELVPG RPTLVWYQPD GTRVVSEGHT LENCCYQGRV RGYAGSWVSI
151 CTCSGLRGLV VLTPERSYTL EQGPGDLQGP PIISRIQDLH LPGHTCALSW
201 RESVHTQTPP EHPLGQRHIR RRRDVVTETK TVELVIVADH SEAQKYRDFQ
251 HLLNRTLEVA LLLDTFFRPL NVRVALVGLE AWTQRDLVEI SPNPAVTLEN
301 FLHWRRAHLL PRLPHDSAQL VTGTSFSGPT VGMAIQNSIC SPDFSGGVNM
351 DHSTSILGVA SSIAHELGHS LGLDHDLPGN SCPCPGPAPA KTCIMEASTD
401 FLPGLNFSNC SRRALEKALL DGMGSCLFER LPSLPPMAAF CGNMFVEPGE
451 QCDCGFLDDC VDPCCDSLTC QLRPGAQCAS DGPCCQNCQL RPSGWQCRPT
501 RGDCDLPEFC PGDSSQCPPD VSLGDGEPCA GGQAVCMHGR CASYAQQCQS
551 LWGPGAQPAA PLCLQTANTR GNAFGSCGRN PSGSYVSCTP RDAICGQLQC
601 QTGRTQPLLG SIRDLLWETI DVNGTELNCS WVHLDLGSDV AQPLLTLPGT
651 ACGPGLVCID HRCQRVDLLG AQECRSKCHG HGVCDSNRHC YCEEGWAPPD
701 CTTQLKATSS LTTGLLLSLL VLLVLVMLGA SYWYRARLHQ RLCQLKGPTC
751 QYRAAQSGPS ERPGPPQRAL LARGTKASAL SFPAPPSRPL PPDPVSKRLQ
801 SQGPAKPPPP RKPLPADPQG RCPSGDLPGP GAGIPPLVVP SRPAPPPPTV
851 SSLYL
   (SEQ ID NO:2)
```

FEATURES:
Functional domains and key regions:
[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

Number of matches: 5
```
        1      254-257 NRTL
        2      406-409 NFSN
        3      409-412 NCSR
        4      623-626 NGTE
        5      628-631 NCSW
```
----

[2] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 11
```
        1       53-55 SEK
        2       73-75 SLK
        3      199-201 SWR
        4      283-285 TQR
        5      411-413 SRR
        6      589-591 TPR
        7      602-604 TGR
        8      611-613 SIR
        9      686-688 SNR
```

FIGURE 2A

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```
10      760-762 SER
11      796-798 SKR
```

----

[3] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

Number of matches: 8

```
1       81-84   SLPE
2       199-202 SWRE
3       208-211 TPPE
4       283-286 TQRD
5       500-503 TRGD
6       522-525 SLGD
7       589-592 TPRD
8       611-614 SIRD
```

----

[4] PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 18

```
1       10-15   GLLGAG
2       145-150 GSWVSI
3       323-328 GTSFSG
4       358-363 GVASSI
5       404-409 GLNFSN
6       422-427 GMGSCL
7       475-480 GAQCAS
8       532-537 GQAVCM
9       555-560 GAQPAA
10      571-576 GNAFGS
11      583-588 GSYVSC
12      596-601 GQLQCQ
13      624-629 GTELNC
14      637-642 GSDVAQ
15      670-675 GAQECR
16      682-687 GVCDSN
17      714-719 GLLLSL
18      774-779 GTKASA
```

----

[5] PDOC00016 PS00016 RGD
Cell attachment sequence

```
501-503 RGD
```

FIGURE 2B

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Title: ISOLATED HUMAN METALLOPROTEASE...

----

[6] PDOC00021 PS01186 EGF_2
EGF-like domain signature 2

690-701 CYCEEGWAPPDC

----

[7] PDOC00129 PS00142 ZINC_PROTEASE
Neutral zinc metallopeptidases, zinc-binding region signature

362-371 SIAHELGHSL

<u>Membrane spanning structure and domains:</u>

Helix	Begin	End	Score	Certainity
1	25	45	1.602	Certain
2	144	164	0.925	Putative
3	317	337	1.237	Certain
4	430	450	0.768	Putative
5	547	567	0.601	Putative
6	640	660	1.243	Certain
7	711	731	2.394	Certain

BLAST Alignment to Top Hit:
Alignment to top blast hit:

>CRA|335001098640323 /altid=gi|7451525 /def=pir||G02390 disintegrin
        and metalloproteinase MDC15 (EC 3.4.24.-) - human
        /org=human /taxon=9606 /dataset=nraa /length=814
        Length = 814

 Score = 1714 bits (4390), Expect = 0.0
 Identities = 812/855 (94%), Positives = 812/855 (94%)
 Frame = +1

Query: 76   MRLALLWALGLLGAGSPLPSWPLPNIALLSIPSVLSWGVLGPAGGTEEQQAESEKAPREP 255
             MRLALLWALGLLGAGSPLPSWPLPNI   GGTEEQQAESEKAPREP
Sbjct: 1   MRLALLWALGLLGAGSPLPSWPLPNI-----------------GGTEEQQAESEKAPREP 43

Query: 256   LEPQVLQDDLPISLKKVLQTSLPEPLRIKLELDGDSHILELLQNRELVPGRPTLVWYQPD 435
             LEPQVLQDDLPISLKKVLQTSLPEPLRIKLELDGDSHILELLQNRELVPGRPTLVWYQPD
Sbjct: 44   LEPQVLQDDLPISLKKVLQTSLPEPLRIKLELDGDSHILELLQNRELVPGRPTLVWYQPD 103

Query: 436   GTRVVSEGHTLENCCYQGRVRGYAGSWVSICTCSGLRGLVVLTPERSYTLEQGPGDLQGP 615
             GTRVVSEGHTLENCCYQGRVRGYAGSWVSICTCSGLRGLVVLTPERSYTLEQGPGDLQGP
Sbjct: 104   GTRVVSEGHTLENCCYQGRVRGYAGSWVSICTCSGLRGLVVLTPERSYTLEQGPGDLQGP 163

FIGURE 2C

Docket No.: CL001177DIV2
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Title: ISOLATED HUMAN METALLOPROTEASE...

```
Query:  616  PIISRIQDLHLPGHTCALSWRESVHTQTPPEHPLGQRHIRRRRDVVTETKTVELVIVADH  795
             PIISRIQDLHLPGHTCALSWRESVHTQTPPEHPLGQRHIRRRRDVVTETKTVELVIVADH
Sbjct:  164  PIISRIQDLHLPGHTCALSWRESVHTQTPPEHPLGQRHIRRRRDVVTETKTVELVIVADH  223

Query:  796  SEAQKYRDFQHLLNRTLEVALLLDTFFRPLNVRVALVGLEAWTQRDLVEISPNPAVTLEN  975
             SEAQKYRDFQHLLNRTLEVALLLDTFFRPLNVRVALVGLEAWTQRDLVEISPNPAVTLEN
Sbjct:  224  SEAQKYRDFQHLLNRTLEVALLLDTFFRPLNVRVALVGLEAWTQRDLVEISPNPAVTLEN  283

Query:  976  FLHWRRAHLLPRLPHDSAQLVTGTSFSGPTVGMAIQNSICSPDFSGGVNMDHSTSILGVA  1155
             FLHWRRAHLLPRLPHDSAQLVTGTSFSGPTVGMAIQNSICSPDFSGGVNMDHSTSILGVA
Sbjct:  284  FLHWRRAHLLPRLPHDSAQLVTGTSFSGPTVGMAIQNSICSPDFSGGVNMDHSTSILGVA  343

Query: 1156  SSIAHELGHSLGLDHDLPGNSCPCPGPAPAKTCIMEASTDFLPGLNFSNCSRRALEKALL  1335
             SSIAHELGHSLGLDHDLPGNSCPCPGPAPAKTCIMEASTDFLPGLNFSNCSRRALEKALL
Sbjct:  344  SSIAHELGHSLGLDHDLPGNSCPCPGPAPAKTCIMEASTDFLPGLNFSNCSRRALEKALL  403

Query: 1336  DGMGSCLFERLPSLPPMAAFCGNMFVEPGEQCDCGFLDDCVDPCCDSLTCQLRPGAQCAS  1515
             DGMGSCLFERLPSLPPMAAFCGNMFVEPGEQCDCGFLDDCVDPCCDSLTCQLRPGAQCAS
Sbjct:  404  DGMGSCLFERLPSLPPMAAFCGNMFVEPGEQCDCGFLDDCVDPCCDSLTCQLRPGAQCAS  463

Query: 1516  DGPCCQNCQLRPSGWQCRPTRGDCDLPEFCPGDSSQCPPDVSLGDGEPCAGGQAVCMHGR  1695
             DGPCCQNCQLRPSGWQCRPTRGDCDLPEFCPGDSSQCPPDVSLGDGEPCAGGQAVCMHGR
Sbjct:  464  DGPCCQNCQLRPSGWQCRPTRGDCDLPEFCPGDSSQCPPDVSLGDGEPCAGGQAVCMHGR  523

Query: 1696  CASYAQQCQSLWGPGAQPAAPLCLQTANTRGNAFGSCGRNPSGSYVSCTPRDAICGQLQC  1875
             CASYAQQCQSLWGPGAQPAAPLCLQTANTRGNAFGSCGRNPSGSYVSCTPRDAICGQLQC
Sbjct:  524  CASYAQQCQSLWGPGAQPAAPLCLQTANTRGNAFGSCGRNPSGSYVSCTPRDAICGQLQC  583

Query: 1876  QTGRTQPLLGSIRDLLWETIDVNGTELNCSWVHLDLGSDVAQPLLTLPGTACGPGLVCID  2055
             QTGRTQPLLGSIRDLLWETIDVNGTELNCSWVHLDLGSDVAQPLLTLPGTACGPGLVCID
Sbjct:  584  QTGRTQPLLGSIRDLLWETIDVNGTELNCSWVHLDLGSDVAQPLLTLPGTACGPGLVCID  643

Query: 2056  HRCQRVDLLGAQECRSKCHGHGVCDSNRHCYCEEGWAPPDCTTQLKATSSLTTGLLLSLL  2235
             HRCQRVDLLGAQECRSKCHGHGVCDSNRHCYCEEGWAPPDCTTQLKATSSLTTGLLLSLL
Sbjct:  644  HRCQRVDLLGAQECRSKCHGHGVCDSNRHCYCEEGWAPPDCTTQLKATSSLTTGLLLSLL  703

Query: 2236  VLLVLVMLGASYWYRARLHQRLCQLKGPTCQYRAAQSGPSERPGPPQRALLARGTKASAL  2415
             VLLVLVMLGASYWYRARL QRLCQLKGPTCQYRAAQSGPSERPGPPQRALLARGTK
Sbjct:  704  VLLVLVMLGASYWYRARLXQRLCQLKGPTCQYRAAQSGPSERPGPPQRALLARGTK----  759

Query: 2416  SFPAPPSRPLPPDPVSKRLQSQGPAKPPPPRKPLPADPQGRCPSGDLPGPGAGIPPLVVP  2595
                             SQGPAKPPPPRKPLPADPQGRCPSGDLPGPG GIPPLVVP
Sbjct:  760  -------------------SQGPAKPPPPRKPLPADPQGRCPSGDLPGPGPGIPPLVVP  799
```

FIGURE 2D

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Query: 2596 SRPAPPPPTVSSLYL 2640
        SRPAPPPPTVSSLYL
Sbjct: 800 SRPAPPPPTVSSLYL 814 (SEQ ID NO:4)

Hmmer search results (Pfam):
Scores for sequence family classification (score includes all domains):

Model	Description	Score	E-value	N
PF01421	Reprolysin (M12B) family zinc metalloproteas	259.3	5.3e-74	1
PF01562	Reprolysin family propeptide	128.4	2.1e-35	1
PF00200	Disintegrin	70.0	3.4e-22	1
CE00385	E00385 platelet_aggregation_activation_inhib	26.5	5.4e-06	1
PF00035	Double-stranded RNA binding motif	7.2	1.2	1
CE00423	E00423 stromelysin_1	4.5	0.99	1
PF01400	Astacin (Peptidase family M12A)	2.6	7.8	1

Parsed for domains:

Model	Domain	seq-f	seq-t	hmm-f	hmm-t		score	E-value
PF01562	1/1	100	217 ..	1	119	[]	128.4	2.1e-35
PF01400	1/1	363	373 ..	91	101	..	2.6	7.8
CE00423	1/1	364	375 ..	222	233	..	4.5	0.99
PF01421	1/1	230	428 ..	1	200	[.	259.3	5.3e-74
CE00385	1/1	447	518 ..	1	67	[.	26.5	5.4e-06
PF00200	1/1	447	523 ..	1	76	[]	70.0	3.4e-22
PF00035	1/1	734	766 ..	1	37	[.	7.2	1.2

FIGURE 2E

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```
   1 TTGGGTGACC CTGGGCAGTG ATCACATCTC CAAGCATCAG TTTTCTCACC
  51 TGAAAAAAAG GAGATGATAA TAACACTATC TGCCTTACAT GACAATTGAA
 101 TTGAATTTTT TTTTTTTTTT TGAGACTAAG TCTCACTCTG TCGCCCAGGC
 151 TGGAGTGCAG TGGCGTGATC TTGGCTCACT GCAACCTCCA CCTCCCCAGT
 201 TCAAGCGATT CTCGTGCCTC AGCTTCCCGA GTAGCTGGGA TTACAGGCAC
 251 ACACTACCAC GCCCGGCTAA TTTAGAATTG AAATAATTTA TGTACAGTAT
 301 CTTAGTACAG GACCTGACAT TATAAACAAT GAGTGGCAGC CATTCTTATT
 351 TAATCAGTCC TAACAAAGTT CATAAAAGTG AGACTGTGTT TGCTTAGCTT
 401 TTTCCCTAGG GCCTGGATAC CCCCAGCCCC CATGACACAC AATAGGGGCC
 451 AAATGAATGT GTTGTGAAAA AATGAAAAAC AAAAAACAAA AAAGAACATG
 501 CTGGGATTCC TTGACAGGGT CGTGAAGCAA ACTGAATGTG AATGCACAGA
 551 TGGAAATGTG CCAGACAGTC ATTCCAAGCA GAATGTGCAA AGACTCAGTC
 601 CACAGGGAAT GCGAAGTGCC AGGGCTAGTC TCAGGAGAAA CTGGCTCAGA
 651 AGAGACAGCT CTCAGGGAGG GCTAAAGTAG GAAAGAGGCT AGAAAGGGAC
 701 CAGGTGAGGG AAGGCTCTGA AGGCCAAGCC CAAGAGTTCT GCCTGTCTGG
 751 CAGGCAGCAG GGCCTCTGGA GTTTCTTGGG CAAAGAGTGG CTGCTTCCTG
 801 GGTAAGGTGG CCTGTGGAAA ATCCCTGACA ACTGTGTAGA GACATGTCGT
 851 GAGGGATGGC AGGGAGCATA GTGAACTAGG TTTGTGGTTT GGAATCAGGG
 901 CCCCTGGGGT CCAGCCAAGT TGGATTGTTT ACTATCTGTG TGACTTTGAG
 951 AGTCACTTCA CCTTTCTCAA CTGTAAAGTG GGGATAGCAA CAGTGATAGT
1001 CGATCTGGCC TGCTCACTTC TCAGCCTCAC TGTGAGAACC AAATAAGATG
1051 ATTTACAGGA AAGTGCAAAT GAGAGTTGTG GCTGATATCC GCTTGGAGAG
1101 AGCCTGGAGG GTGCATCCTC CCATTCTCCA TCACAGAGTT GGGGAGGGAG
1151 GCACCCTCGC CCTCCAGGGG TTTCCTTTGT CCAACCCAGC CTCCTCCAAC
1201 ACGCGGGAAT TGTCAGGCCT GGCGACTTCA GACAGGAAAC GCTGTCCAGT
1251 TCCCCTTCTT TCCCGCCTCG CTCCCGGGCT GGCGCTAACG CCCACCTCCC
1301 AACAGCGCCA CCCGCTGGCG GATATCCTGC ACCGCGGCTG CCCGCTCCTG
1351 CGCCGCTGGC TGTGCCGGCG CTGCGTGGTG TGCCAGGCAC CCGAGACGCC
1401 CGAGTCCTAC GTGTGCCGGA CGCTGGACTG CGAGGCCGTG TACTGCTGGT
1451 CGTGCTGGGA CGACATGCGG CAGCGGTGCC CGGTCTGCAC GCCCCGCGAA
1501 GAGCTCTCTT CCTCCGCCTT TAGTGACAGC AACGACGACA CTGCCTACGC
1551 GGGGTGAAGA GGCGTCCTGC TCGCTCTTCC GCACCGTCCT TCCCGGTTAA
1601 TAAAATGCCC TGTACGCTTC ACGTGGGTCG GGGACTGGGG TGAGCCGCGC
1651 ACTGCCTCGC CTGCAGTCGG GAAAGCCTGC CCGCCCGACC TCTCCGAGCC
1701 AGGCCGCGCA CAGGAGGCAG GGAGGCCGCG AAGCTACTAG GGAGGGGTCC
1751 GGACCTGGCG CCGGGTGAAG GCGCGCCGCC CAAGCCGGTC GGACCGGGCA
1801 CCGGCTCCCA CTCCGCACAG TTGCGGGGAA GCGGTAGCGC TGAGCAGCGC
1851 GGGCGTAGTG GGCGGTGTCC CCGCTCCCGA GGCACCCGGC GCGCAGCGGG
1901 GCGGGCTTTG CCGGGGGCGG AGCTTGGCTT GGGGCCGGGT GGGAGGGGGC
1951 GGGCCGGGGC GGGGCCTGGT GGCCGCGCGG CGCTGCTGGG TTCTCCGAGG
2001 CGACCTGGCC GCCGGCCGCT CCTCCGCGCG CTGTTCCGCA CTTGCTGCCC
2051 TCGCCCGGCC CGGAGCGCCG CTGCCATGCG GCTGGCGCTG CTCTGGGCCC
2101 TGGGGCTCCT GGGCGCGGGC AGCCCTCTGC CTTCCTGGCC GCTCCCAAAT
2151 ATAGGTGAGT CCTCCGCCTG GAGTGGGTCG GGGGGCGGAC TGGGAGGGAG
2201 GTGCAGGAAA GTCGGAAGGC ATTAGGGTAA TGGGGCCGGA CGGAGACCCT
2251 GGGAGAGCCC AGCCAGAGCG CGGCCCGCCC TGGTCCGCTG TCCTGGGCCT
```

FIGURE 3A

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Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

2301 AGGGCCCGGT GACTTGGCGA TGGGGTGAAA AGAGAAGGAG GGGGGATGCC
2351 GGCGCCCCCT GCCTCCTGCC TGGTCATCCT CTGCGCGGTC CCTGCGGACA
2401 CTTTCAGGCT CAGGTACCAG GTACCGAGGG GCCTGTCCAG CGCCACTTCA
2451 AGATCGTGAT GAGAGGGTCG CTGCTCCCCA GGACTGGCAT CTTCGCTGCT
2501 CTGGGGCCTA GCTAACCGTT CCACCCGGTG CCAGGGCGCT GAGCGGGCAT
2551 GGCTTGTAGG GTTTAGTGAA GAGGATTCTC TCTAGCCTCT ATTCCAGGCC
2601 TGGGGCCGCC AGGCACTCCT CACCCTGGTG CTGTTGCCAC CAGTGCCTGG
2651 CCGAGCGGGA GGGGCCCGAG ATGAGCCAGG AGAAGGGAGA ATTGGCCAGG
2701 AAAGAGGCTG GGACACCAAC TCCTCCTTGG AACTTTCACT TCCCGCTGCT
2751 GTCTTGGGCC GGGACCGAGA GGGCAGGCGC GGGTGGAGTG TCCGGAGGAG
2801 AGAGGGCCAT TGTGTGTTGG GGGGGTGGGG GGTGCTCGAG GAGGAAGCAG
2851 AGGCTGTAGG CAGCGGGTGT GCCTGACTGG GCATGAGGGT GTTTAGGGAG
2901 GTGGGGGTGT TTGCACTGCT CACCCAGAAA TGGGCGTTCC TGGCATCTCC
2951 GATGTGAGCG AAGGGGAGGG TGAGCGGGCA CCCGGCCACA AGGCTTAGCT
3001 CAGTCTCGAG AGGGGGCGTT CCTGAAGTGG GGGGAGAGTG ATTGGGAGGG
3051 AGTGGGAACC GCGGAGGGTC CTGTGAGAAC CTGGGATTGG CCGGAAGGGG
3101 ACAAGGAGGG CCACAGGCTG CGCAAGCCGA AAGTCTTTCT TGGGGACTTG
3151 TGAATGGGTT GGTGGGTGGA AAGCCATAAA TTAGAGAGAC ACCCTCTCCT
3201 TCCAGTATTC TTCTTTAAGT CTCAGCATGC AATGTGGAAG CCCCTCAGGT
3251 ACCTAAGGGT CTTGATGGGC TGGGAGCTGG TGGATCTGAG GGCACCTGTC
3301 ACCCCCAGCC CTGCTGTCGA TTCCCTCAGT ACTGTCTTGG GGTGTCCTGG
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3401 AGGGAGCCCT TGGAGCCCCA GGTCCTTCAG GACGATCTCC CAATTAGCCT
3451 CAAAAAGGTG CTTCAGGTGA GCTCTCACTC CCCTCTAATA AATAAACGAA
3501 TCCACACACG CCCCGGTATA GCCAGGTGTC TCAAAGCCAA AGCTTGGCTG
3551 AGGAGCTGGT GGGTAGAGCT CACTGTAGTG GGTCTATCCC AGGCCCAGCT
3601 GCCTCTCCCA CCACACCCCA GCACCTGGCT TCACTTATCT CCCTCTCCCT
3651 CTGCACACAC GTGTATCTGT CTGCCTCAGC CCCACCCAAC CCATCCATCT
3701 CCACTGGGGA AATTGTGAAG CCAAACTTGC TTTCTTCATC TCATGTTGTC
3751 GGTTTTCTCA GTGGGGGGAT TTGGAAAGAG TCAGGACCTT ACCAAACCCC
3801 CCCCCCCCAC CCCATTCTAA AGCTGAGTCA GAGGAAGGGC TGGGGCTTGT
3851 GCTGGGTCCT ACACGGTGCT TCCTCTCTGG GCAGGAAGCC GAGAAGGGGT
3901 GGCTCAGATA CCTTCCTTGA CCTCCGCACA CAACCCCCCA GAACAATGCT
3951 CCAGGCCAGG CAGGGTTTCC TGGCCCCTCC CCTGGGATCC CCCCACCAGT
4001 GATCTAATTG CTGGTGCTCT TCTGTGGGCC TGAGGTTTTC TGGTTAGAGA
4051 GGCTGGGAGT TGTGGACAGG TCTAGGGAGG TGACCTGCCC TCTGGTGCCC
4101 ACAGACCAGT CTGCCTGAGC CCCTGAGGAT CAAGTTGGAG CTGGACGGTG
4151 ACAGTCATAT CCTGGAGCTG CTACAGAATA GGTAATAGTG ATGGTGGCAA
4201 TAACAGTGAC CACATGGCCA ACAACTTGTA TAGCATTTAT TATGTGCCAG
4251 GTACTAAGTG CTTGTGCTCA TTTAATCCTC ATAACAGCCC TATAAGGGAT
4301 ATACTATCAT GTATTATTGT CCTCACTTTA TACATGAGGA AGTCAAGGCA
4351 CAGAGAGATT AAATAACTTG CCCCAGGTCA CACAGCTAGT ATGTGGTGAA
4401 AACCAGATTG GAATTCAAAT AAACTAACAG AGTCAGTGGC CCAACCAGTA
4451 TACTTTGCTG CCCCGGGGTC AGGAGTGGAA AAGTTGGCTG CGGGGGTTGC
4501 CTGGTCCCCA GCCCCACAAC CACCTTCAAG CCTCTGCTTG TCAATGCACC
4551 GACCCTGGGA AGTGGCTTTA GCACTGCCTT CTTTTTCTTC ACTTCACAGG

FIGURE 3B

Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

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4601 GGAGTTGGTC CCATGTCCGC CCCGACCCTT GGGGTCCGGC TNTCCCCTCT
4651 CCCCCCTTCG GCGCCGCCCC TTCCCTTTTC TTTCTTCCCC TCCGCTTTCG
4701 TCCTTTTGCC TCCCCCGTGC CGTTGCGCGT TCCTTCTTCC CCGTTCCCTC
4751 TCCCCTCTTT TGTTCCCTCC CGTTCTTTTC TCCCCCGCGT TCTTTCCTCC
4801 TCCTTTTCGG TCCGCCCTCG CCTTCCTCCC TTCCCCTTCT GCCCTTCGCC
4851 NTTTCTCCCT CTCGTTCTTC CTCGGTGTCG CGTCGTCCCG GCTCGGCCTT
4901 TCCCCGCTTC CTCCCGCTCG CCGTTTTTTT CCCCCCGCTG TCTTCCCGTG
4951 TTCCCCTTCG CTTCTCCTCT TCCCTTTCGT TCGGTCGTTT TCTCGTTCCA
5001 TTCCCGCCTC CCCGTTTCCG TTCCACTCCT TCTTCCTCCT TTCCCGCTCC
5051 CCGTTTCTCC CGACCCCAAC AACAAATAAA NNNNNNNNNN NNNNNNNNNN
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5601 TCTCAAAAAA TAAAATAAAA ATAAAATAAA ATAAAATCTA GCTGAGACAG
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5701 ATTAGTTGTA TTTGGCTCTT CATCTGTCTT ATGATCCCAT TTGCAGAGAG
5751 CTCTCACTTG GTTATAGATA ATACATAGTT ACCAATGATG AAGCAATATA
5801 AACCCAATTT CCTAATTTGT AAAATGAAGA TAATAAAACT ACTTGCTGCA
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6001 CTCCCAGGCT GGAGTGCAGT GGCGTGATCT CGGCTCACTG CAAGCTCCGC
6051 CTCCCAGGTT CACGCCATTC TCTTGCCTCA GCCTCCCGAG TAGCTGGGAC
6101 TACAGGCGCC CGCCACTACA CCCGGCTAAT GTTTTGTATT TTTTAGTACA
6151 GACAGGGTTT CACCGTGTTA TCCAGGATGG TCTCGATCTC CTGACCTCAT
6201 GATCCACCCG CCTTGTCCTC CCAAAGTGCT GAGATTACAG GCGTGAGCCA
6251 CCGCACCCAG CTAAATTACT GTTTTTTAAA AATTTGAAAA AAACCACTGA
6301 GTTTGGAGCC AGAAAAGCAG GGGTCTACTC CAACCTTCAT TATCTACTTC
6351 CTGGTCCTCC TTGGCAAGTT CCTGGGCCCT CTGGCCTTCA GTGGCTCATC
6401 TGTAAAATGG GCTCTTCACC CTCCTATTTG ACCCACAGAG TAGGAGTGGC
6451 TGCCTCTTGG TCAGCCCGGC ACAGCTGCTG GCTGCGAGCG GCAGGTTTGC
6501 CTGATAATTC TTCTTGTCCA TAGTAGAGGC GGGATGTGGT AACAGAGACC
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6601 GGCCCCTGCA CATCCTCCTC CCCCTGCACT GCCCTGCCGC CTTTCATGTC
6651 ACCTCTCTTG GCCTACAGGC CCAGAAATAC CGGGACTTCC AGCACCTGCT
6701 AAACCGCACA CTGGAAGTGG CCCTCTTGCT GGACACAGTG AGTGCTGGAC
6751 AGGGCAACCC CCACCCCAGG CCCCTGACCA TGGCAACCCC TCTTCTGAGC
6801 CCCAGCTGTC TTTCAGTTCT TCCGGCCCCT GAATGTACGA GTGGCACTAG
6851 TGGGCCTGGA GGCCTGGACC CAGCGTGACC TGGTGGAGAT CAGCCCAAAC
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FIGURE 3C

Docket No.: CL001177DIV2
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Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

6901 CCAGCTGTCA CCCCTCGAAAA CTTCCTCCAC TGGCGCAGGG CACATTTGCT
6951 GCCTCGATTG CCCCATGACA GTGCCCAGCT GGTGACGTAA GGGCCCCAGA
7001 CTCAGCCAGA GAGGCCAGTC CTGTCCTGGC CAAATTCACA CCCCTTCAGC
7051 ACCCTACCTC AGCCCCTGAA GCTCTGACCA CCGTGGCTTC TGGCCCTGAA
7101 CTTTAGCCTC TCTGTCCCAC AGTGGTACTT CATTCTCTGG GCCTACGGTG
7151 GGCATGGCCA TTCAGAACTC CATCTGTTCT CCTGACTTCT CAGGAGGTGT
7201 GAACATGGTG AGTTATTTCC AGGTCTCCTC CTCATTCCCA ATTCAGTTCC
7251 TCCCAAGTGT GGTGGCATTT ATGCACTGAA ACCCCCCTAT AAAGTTGCCC
7301 AACCCCAAAG CTACAGGTAT AGAGGGTGGA GGTACGTGAT GTGGCCTTTG
7351 CTATCAGGGA GCCCTCGCTT ATGGCCAGCT AGTCACAGTG TACACAGTCA
7401 TCCCCTGTGC AGTCTTCCCA TTTCTTAGAG GAGGGTAGGA GGCAGCTAAG
7451 GCCCAAAGAA CAGAGGTGAT CTCCCTCCAG TGAGGGAGGG GGACAGAGCT
7501 GAGCTAGAAC CCAAGTTTCT GCCATCCAGG CCTGGGTTCT CCTACTTTAG
7551 AAGCAATTCA GGAGGGAAGC AGTGCCTGCT GAGTGCCCAC GAGGTCAGAC
7601 GTGGAGGGAA CAGGAGCAGA GAGGGTGGTC TGGGCATTGT GGTGGAGGCA
7651 GGCTGGGACT GGACCTACAG TACCCCTCCC CAATGACAGG ACCACTCCAC
7701 CAGCATCCTG GGAGTCGCCT CCTCCATAGC CCATGAGTTG GGCCACAGCC
7751 TGGGCCTGGA CCATGATTTG CCTGGGAATA GCTGCCCCTG TCCAGGTCCA
7801 GCCCCAGCCA AGACCTGCAT CATGGAGGCC TCCACAGAGT AAGTAGCTGC
7851 AGGATGGAGA GAGGGTGTGG GGCAGGGGGC AGGGANNNNN NNNNNNNNNN
7901 NNNNNNNNNN TGTTAGAGTT ACCTTCCTTG CCACCCTCCC CAGCTTCCTA
7951 CCAGGCCTGA ACTTCAGCAA CTGCAGCCGA CGGGCCCTGG AGAAAGCCCT
8001 CCTGGATGGA ATGGGCAGCT GCCTCTTCGA ACGGCTGCCT AGCCTACCCC
8051 CTATGGCTGC TTTCTGCGGA AATATGTTTG TGGAGCCGGG CGAGCAGTGT
8101 GACTGTGGCT TCCTGGATGT GAGCCCCTTT CCCAAAGCCT CGCCCCACTC
8151 ACTTCTGTAC CCTCACCCTG GCTCATTAGC CCTATCCCAG CCTCCTGAGC
8201 TCTTGGGTTC TGAAGGGACT TTCCACCCCT CTCCTACTTG CCCTGTCTGT
8251 GGGGACAGCA CATGGGTTGT TGGGCTCTAG CCCTCGCTTG CTGTGTAGCT
8301 TCTGGTCTTG GCCTGTGGGA GGAGGAGAGA TTGGAGGGAG GCTCACAGGC
8351 CCCACCTGCT CTGATGCCCG GCCCCCGTGC TCCTGCCCAC AGGACTGCGT
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8901 TGCACCCCTA GGTAAGTGAG GAAACCTGGC TCCTCCTTTG GGTTTCTGAG
8951 AGCCTTGGCC CTGCTCCTAC TAACTCTGTG TGCCCTTCCC CCTCNNNNNN
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9051 CATTTGTAGT TACTCACACT TTTGCCTTCA NACAGCTAAT ACTCGGGGAA
9101 ATGCTTTTGG GAGCTGTGGG CGCAACCCCA GTGGCAGTTA TGTGTCCTGC
9151 ACCCCTAGGT AAGTGAGGAA ACCTGGCTCC TCCTTTGGGT TTCTGAGAGC

FIGURE 3D

Docket No.: CL001177DIV2
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Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

9201 CTTGGCCCTG CTCCTACTAA CTCTGTGTGC CCTTCCCCCT CCCCACAGAG
9251 ATGCCATTTG TGGGCAGCTC CAGTGCCAGA CAGGTAGGAC CCAGCCTCTG
9301 CTGGGCTCCA TCCGGGATCT ACTCTGGGAG ACAATAGATG TGAATGGGAC
9351 TGAGCTGAAC TGCAGCTGGG TGCACCTGGA CCTGGGCAGT GATGTGGCCC
9401 AGCCCCTCCT GACTCTGCCT GGCACAGCCT GTGGCCCTGG CCTGGTGAGC
9451 AGCCTGGGTG GGCAAGACCA GGTGTGAGAA GGGACATTTG GACCACAATG
9501 AACAGAGCCC AGACTTCACC ATTCACCAAT GTCAAAGGCA GGGACTCCAA
9551 GGGAAGTCAG TTTCTTACTT CAGATGGAGC AAAGTCCTAT CAACTCACTA
9601 TGCCTTGGTT TCCCCATCTG TAAACGCAGG GTATGGCCTC AACCTTATTG
9651 GCCTCCCAGT CCCATTAAAG CTTTGTGGGA ATCTGATCCA GGCTCTTCTC
9701 TCCCTGGGTC AGGTGTGTAT AGACCATCGA TGCCAGCGTG TGGATCTCCT
9751 GGGGGCACAG GAATGTCGAA GCAAATGCCA TGGACATGGG GTGAGCTGGG
9801 ATGGGGGAAG TGGAAGGGGA GCAGAGAGCC TCTAGAGAGG AAAAGGATAC
9851 TGGGCTTTGG AAATAGACAT ATCTGGGTTT TAATCCTTGC TCTACTACTT
9901 CCCAGTTGTG TGACCTCGGG CAGGTTACTA ACTTTGCTGA GCTCAGTTTC
9951 CCCACCTATC AAATGGCTAT AATAATAGTA TCCCCATCCA GGGTACATGA
10001 GATGTGTATG CAAGCAAGTA GCACAGTGGG TAACTAATAG TGCTTTTAAA
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FIGURE 3E

Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

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13751 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
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FIGURE 3F

Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

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14851 AGTGTCCTCG CTCTACCTCT GACCTCTCCG GAGGTTCCGC TGCCTCCAAG
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14951 TGACTGAAGG CGCCAGAGAC TGGCGGTGTC TTAAGACTCC GGGCACCGCC
15001 ACGCGCTGTC AAGCAACACT CTGCGGACCT GCCGGCGTAG TTGCAGCGGG
15051 GGCTTGGGGA GGGGCTGGGG GTTGGACGGG ATTGAGGAAG GTCCGCACAG
15101 CCTGTCTCTG CTCAGTTGCA ATAAACGTGA CATCTTGGGA GCGTTCCCCA
15151 GAGTTTGTCT GCTTCTAGAA CCCGGGTCGC TCCTGCTGCG GTTCCAGGTT
15201 TGGCCGCCAG AAGACGCTGC CGCCTCAGAC GAGGGCGGGC TGTGTGGGGC
15251 GGGAGTACCA GAAAGGGTCG GCGTGTGTCC CCGGGATGCT CGCAGCTTCC
15301 CTCTGCCCAG ACTGGGGTGG CTTTCGGCGC AATCTGTCAA GCTGTTGGAC
15351 CTGCCGTCCC CACTCTGACC ATTGGCTGGG AAAAGTGGAT CTGGCTGATG
15401 CTCCCAGAGC CCAGGAGCCA GGGCGGAGCG GGGCGGCGGC TGCTCCCACG
15451 ATCCCAAGGC CGCGCACCTG CCTCCTCCCC CTCCGCCGCC GCCACTTGAG
15501 GGATCGGGAA CAAAGGTGCT TTGTACAGGC CGCAACCACC TCATTACTTC
15551 GTCTTAGGGA CTGGGGCCGC GTGGGCCCCC AGCCCGGAAC GAAGGTGTGG
15601 AGCGGCAAGG GACAGACGCC AATCTTAAAG TGAGCATCTA GCGCGCCACC
15651 TAAGGCTCTT TAGGGAAGGT GGTCCCAGAG CTGTGTTGTC CCTTCCGCTT
15701 GCACTGTCCC TAGATGTGCA AAGAAAACGG GGCAGTGCAT GAAGGTGGTT
15751 GGACAGGCTT CATGGATCCT CGCCCGCGCC TCACTTTCCC CTATCTGGGC
15801 AAAGGTTATG TACCCTTATT TAAAATCTTC CAAACTTCTA ATAAGGCAGT
15851 CTACCCTGCA CTAAAGCAGA CACGAAAGAG ATGACCTCCC TAAAAATACT
15901 GCTGTTGGAA TACGTCCTTC CTTCCCGCCC CCTCGCAGTG CGGTGCAGCC
15951 TCAGTGGAAG CTTTGGCGAA CCTGGCGCGC GCTGCGGTGC ACAGAGGGTT
16001 AACTGGAGTT GGCGCTGGGT GGAGAGGAGG AGACGCGCTC CCATTGGCGG
16051 AAAGTTATTC AGGGGCGGGG TCAGTGAATC TCCGTACCCC ACTCCCCTTT
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FIGURE 3G

Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

16101 CCGCAACTTC CCTCTTCACT TTGTACCTTT CTCTCCTCGA CTGTGAAGCG
16151 GGCCGGGACC TGCCAGGCCA GACCAAACCG GACCTCGGGG GCGATGCGGC
16201 TGCTGCCCCT GCTGCGGACT GTCCTATGGG CCGCGTCCTC GGCTCCCCTC
16251 TGCGCGGGGG CTCCAGCCTC CGCCACGTAG TCTACTGGAA CTCCAGTAAC
16301 CCCAGGTAGC CGGGCCGAAC CGGGCGAGCG CACAGCCAAG TCTGCGCGCT
16351 CCCGGGCTTT GCGCGCGCCC GCCACCCGCT CTTTGCGCGG CGCCGCCTGA
16401 GCCTGGCCGC GCGCCGGGGC TCCTTTGTTT GAGCCGGCGG GGGAGGGGGG
16451 AGGGGCGAGG GGCGAGGCGC GCCCTGGGTC TCCCCACAGC CCGCATGTGT
16501 TGGGGGGCAG GCAGAAGACC CCAGCCCCAA GGGTTGTCTA GGGGGTCTTG
16551 GAGCATGGAG CTGGGGGGGC CTTTGCCCGC ACTCCGGGCT CCGCCCCCCT
16601 CGCTGCTCTC CTGGCGATCC CCAGCCTCCC GCAGGCTGGA GCTGTGGCTG
16651 ACGAACTTGA GAGCGAGGGA GGGGGCTTTA CTCTTATGAA AGAGCGTGGG
16701 TTACTCTCCT GCCCGCTGGG TCTCACCTCT GGCTCTCACT CTGTCTCCTG
16751 ATCTCATTTG CTATCTCTGC TTTCATCTCT GTCTTTATTG GTCCTTCTGT
16801 TTCTTTCCAG TGTCAGCCCT GCCCTTCTAG CCGAATCACC TCTGGGCAAG
16851 TCTCGTGACC TTCCTAACCT CATTTATCTC ACCTGTATAA TGGGCTAATA
16901 ATACCTAGTA CCCTGGGAAG TCTGGCAGGG TAAGTGAGGT CATGTATGTG
16951 AAAGAGGCTC AGGCTGTACA GATATAAACT ATTATTTCTT TCTCTCTCCT
17001 GAGCTGCCTG CCTTTGAACC TTAGTATATT TTACTGTTTC CATCCCCCTC
17051 CCCAAGTCTC CCTGCCTCTC CTATTTCCTA TCTGTTTTTC TTTCTGATTT
17101 TCTACTTGAG ACAATCTGTG ACTATTCATT TCTTCACT
(SEQ ID NO: 3)

FEATURES:
Start: 2076
Exon: 2076-2154
Intron: 2155-3308
Exon: 3309-3466
Intron: 3467-4104
Exon: 4105-4181
Intron: 4182-4206
Exon: 4207-4250
Intron: 4251-4436
Exon: 4437-4607
Intron: 4608-5048
Exon: 5049-5052
Intron: 5053-6007
Exon: 6008-6145
Intron: 6146-6528
Exon: 6529-6589
Intron: 6590-6668
Exon: 6669-6737
Intron: 6738-6816
Exon: 6817-6986
Intron: 6987-7122
Exon: 7123-7207

FIGURE 3H

Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

Intron: 7208-7689
Exon: 7690-7838
Intron: 7839-7943
Exon: 7944-8118
Intron: 8119-8392
Exon: 8393-8485
Intron: 8486-8606
Exon: 8607-8911
Intron: 8912-9248
Exon: 9249-9444
Intron: 9445-9712
Exon: 9713-9791
Stop 9792

SNPs:

DNA Position	Major	Minor	Domain	Protein Position	Major	Minor
2522	C	G	Intron			
4326	C	T	Intron			
5954	T	–	Intron			
6783	G	A	Intron			
7514	A	C	Intron			
15505	C	T	Beyond ORF(3')			
16123	A	G	Beyond ORF(3')			

Context:

DNA
Position

2522   TTAGGGTAATGGGGCCGGACGGAGACCCTGGGAGAGCCCAGCCAGAGCGCGGCCCGCCCT
        GGTCCGCTGTCCTGGGCCTAGGGCCCGGTGACTTGGCGATGGGGTGAAAAGAGAAGGAGG
        GGGGATGCCGGCGCCCCCTGCCTCCTGCCTGGTCATCCTCTGCGCGGTCCCTGCGGACAC
        TTTCAGGCTCAGGTACCAGGTACCGAGGGGCCTGTCCAGCGCCACTTCAAGATCGTGATG
        AGAGGGTCGCTGCTCCCCAGGACTGGCATCTTCGCTGCTCTGGGGCCTAGCTAACCGTTC
        [C,G]
        ACCCGGTGCCAGGGCGCTGAGCGGGCATGGCTTGTAGGGTTTAGTGAAGAGGATTCTCTC
        TAGCCTCTATTCCAGGCCTGGGGCCGCCAGGCACTCCTCACCCTGGTGCTGTTGCCACCA
        GTGCCTGGCCGAGCGGGAGGGGCCCGAGATGAGCCAGGAGAAGGGAGAATTGGCCAGGAA
        AGAGGCTGGGACACCAACTCCTCCTTGGAACTTTCACTTCCCGCTGCTGTCTTGGGCCGG
        GACCGAGAGGGCAGGCGCGGGTGGAGTGTCCGGAGGAGAGAGGGCCATTGTGTGTTGGGG

FIGURE 3I

Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

4326   GGGCCTGAGGTTTTCTGGTTAGAGAGGCTGGGAGTTGTGGACAGGTCTAGGGAGGTGACC
        TGCCCTCTGGTGCCCACAGACCAGTCTGCCTGAGCCCCTGAGGATCAAGTTGGAGCTGGA
        CGGTGACAGTCATATCCTGGAGCTGCTACAGAATAGGTAATAGTGATGGTGGCAATAACA
        GTGACCACATGGCCAACAACTTGTATAGCATTTATTATGTGCCAGGTACTAAGTGCTTGT
        GCTCATTTAATCCTCATAACAGCCCTATAAGGGATATACTATCATGTATTATTGTCCTCA
        [C,T]
        TTTATACATGAGGAAGTCAAGGCACAGAGAGATTAAATAACTTGCCCCAGGTCACACAGC
        TAGTATGTGGTGAAAACCAGATTGGAATTCAAATAAACTAACAGAGTCAGTGGCCCAACC
        AGTATACTTTGCTGCCCCGGGGTCAGGAGTGGAAAAGTTGGCTGCGGGGGTTGCCTGGTC
        CCCAGCCCCACAACCACCTTCAAGCCTCTGCTTGTCAATGCACCGACCCTGGGAAGTGGC
        TTTAGCACTGCCTTCTTTTTCTTCACTTCACAGGGGAGTTGGTCCCATGTCCGCCCCGAC

5954   AGGTGGTTTGCCCGAGGCCCTACAACTAATAAATGGCCTATCCATTTATTAGTTGTATTT
        GGCTCTTCATCTGTCTTATGATCCCATTTGCAGAGAGCTCTCACTTGGTTATAGATAATA
        CATAGTTACCAATGATGAAGCAATATAAACCCAATTTCCTAATTTGTAAAATGAAGATAA
        TAAAACTACTTGCTGCATAGAGTTGCTGGGAAGATTAAATAAGTCCATATAGATGTAAAG
        TGCTTAAAACTATGCCAGACCTATGGTAAGTGACAAGAGTTGTTATTGGGATTTTTAAAA
        [T,-]
        TATTATTATTATTATTATTATTTGAGACAGAGTCTCGCTCTGTCTCCCAGGCTGGAG
        TGCAGTGGCGTGATCTCGGCTCACTGCAAGCTCCGCCTCCCAGGTTCACGCCATTCTCTT
        GCCTCAGCCTCCCGAGTAGCTGGGACTACAGGCGCCCGCCACTACACCCGGCTAATGTTT
        TGTATTTTTTAGTACAGACAGGGTTTCACCGTGTTATCCAGGATGGTCTCGATCTCCTGA
        CCTCATGATCCACCCGCCTTGTCCTCCCAAAGTGCTGAGATTACAGGCGTGAGCCACCGC

6783   TGCGAGCGGCAGGTTTGCCTGATAATTCTTCTTGTCCATAGTAGAGGCGGGATGTGGTAA
        CAGAGACCAAGACTGTGGAGTTGGTGATTGTGGCTGATCACTCGGAGGTGAGCCTGCTGG
        CCCCTGCACATCCTCCTCCCCCTGCACTGCCCTGCCGCCTTTCATGTCACCTCTCTTGGC
        CTACAGGCCCAGAAATACCGGGACTTCCAGCACCTGCTAAACCGCACACTGGAAGTGGCC
        CTCTTGCTGGACACAGTGAGTGCTGGACAGGGCAACCCCCACCCCAGGCCCCTGACCATG
        [G,A]
        CAACCCCTCTTCTGAGCCCCAGCTGTCTTTCAGTTCTTCCGGCCCCTGAATGTACGAGTG
        GCACTAGTGGGCCTGGAGGCCTGGACCCAGCGTGACCTGGTGGAGATCAGCCCAAACCCA
        GCTGTCACCCTCGAAAACTTCCTCCACTGGCGCAGGGCACATTTGCTGCCTCGATTGCCC
        CATGACAGTGCCCAGCTGGTGACGTAAGGGCCCCAGACTCAGCCAGAGAGGCCAGTCCTG
        TCCTGGCCAAATTCACACCCCTTCAGCACCCTACCTCAGCCCCTGAAGCTCTGACCACCG

7514   TATTTCCAGGTCTCCTCCTCATTCCCAATTCAGTTCCTCCCAAGTGTGGTGGCATTTATG
        CACTGAAACCCCCCTATAAAGTTGCCCAACCCCAAAGCTACAGGTATAGAGGGTGGAGGT
        ACGTGATGTGGCCTTTGCTATCAGGGAGCCCTCGCTTATGGCCAGCTAGTCACAGTGTAC
        ACAGTCATCCCCTGTGCAGTCTTCCCATTTCTTAGAGGAGGGTAGGAGGCAGCTAAGGCC
        CAAAGAACAGAGGTGATCTCCCTCCAGTGAGGGAGGGGGACAGAGCTGAGCTAGAACCCA
        [A,C]
        GTTTCTGCCATCCAGGCCTGGGTTCTCCTACTTTAGAAGCAATTCAGGAGGGAAGCAGTG
        CCTGCTGAGTGCCCACGAGGTCAGACGTGGAGGGAACAGGAGCAGAGAGGGTGGTCTGGG
        CATTGTGGTGGAGGCAGGCTGGGACTGGACCTACAGTACCCCTCCCCAATGACAGGACCA

FIGURE 3J

Docket No.: CL001177DIV2
Serial No.: (to be assigned)
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN METALLOPROTEASE...

CTCCACCAGCATCCTGGGAGTCGCCTCCTCCATAGCCCATGAGTTGGGCCACAGCCTGGG
CCTGGACCATGATTTGCCTGGGAATAGCTGCCCCTGTCCAGGTCCAGCCCCAGCCAAGAC

15505   CGCCAGAAGACGCTGCCGCCTCAGACGAGGGCGGGCTGTGTGGGGCGGGAGTACCAGAAA
GGGTCGGCGTGTGTCCCCGGGATGCTCGCAGCTTCCCTCTGCCCAGACTGGGGTGGCTTT
CGGCGCAATCTGTCAAGCTGTTGGACCTGCCGTCCCCACTCTGACCATTGGCTGGGAAAA
GTGGATCTGGCTGATGCTCCCAGAGCCCAGGAGCCAGGGCGGAGCGGGGCGGCGGCTGCT
CCCACGATCCCAAGGCCGCGCACCTGCCTCCTCCCCCTCCGCCGCCGCCACTTGAGGGAT
[C,T]
GGGAACAAAGGTGCTTTGTACAGGCCGCAACCACCTCATTACTTCGTCTTAGGGACTGGG
GCCGCGTGGGCCCCCAGCCCGGAACGAAGGTGTGGAGCGGCAAGGGACAGACGCCAATCT
TAAAGTGAGCATCTAGCGCGCCACCTAAGGCTCTTTAGGGAAGGTGGTCCCAGAGCTGTG
TTGTCCCTTCCGCTTGCACTGTCCCTAGATGTGCAAAGAAAACGGGGCAGTGCATGAAGG
TGGTTGGACAGGCTTCATGGATCCTCGCCCGCGCCTCACTTTCCCCTATCTGGGCAAAGG

16123   AAATCTTCCAAACTTCTAATAAGGCAGTCTACCCTGCACTAAAGCAGACACGAAAGAGAT
GACCTCCCTAAAAATACTGCTGTTGGAATACGTCCTTCCTTCCCGCCCCCTCGCAGTGCG
GTGCAGCCTCAGTGGAAGCTTTGGCGAACCTGGCGCGCGCTGCGGTGCACAGAGGGTTAA
CTGGAGTTGGCGCTGGGTGGAGAGGAGGAGACGCGCTCCCATTGGCGGAAAGTTATTCAG
GGGCGGGGTCAGTGAATCTCCGTACCCCACTCCCCTTTCCGCAACTTCCCTCTTCACTTT
[A,G]
TACCTTTCTCTCCTCGACTGTGAAGCGGGCCGGGACCTGCCAGGCCAGACCAAACCGGAC
CTCGGGGGCGATGCGGCTGCTGCCCCTGCTGCGGACTGTCCTATGGGCCGCGTCCTCGGC
TCCCCTCTGCGCGGGGGCTCCAGCCTCCGCCACGTAGTCTACTGGAACTCCAGTAACCCC
AGGTAGCCGGGCCGAACCGGGCGAGCGCACAGCCAAGTCTGCGCGCTCCCGGGCTTTGCG
CGCGCCCGCCACCCGCTCTTTGCGCGGCGCCGCCTGAGCCTGGCCGCGCGCCGGGGCTCC

Chromosome map:
Chromosome # 1

FIGURE 3K